

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
8 April 2004 (08.04.2004)

PCT

(10) International Publication Number  
WO 2004/028585 A3

(51) International Patent Classification<sup>7</sup>: A61B 1/00, 10/00

(74) Agents: SANFORD T. COLB & CO. et al.; P.O. Box 2273, 76122 Rehovot (IL).

(21) International Application Number:

PCT/IL2003/000751

(22) International Filing Date:

18 September 2003 (18.09.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/414,741 30 September 2002 (30.09.2002) US

(71) Applicant (for all designated States except US): SIGHT-LINE TECHNOLOGIES LTD. [IL/IL]; Advanced Technology Center (MATAM), 31905 Haifa (IL).

(72) Inventor; and

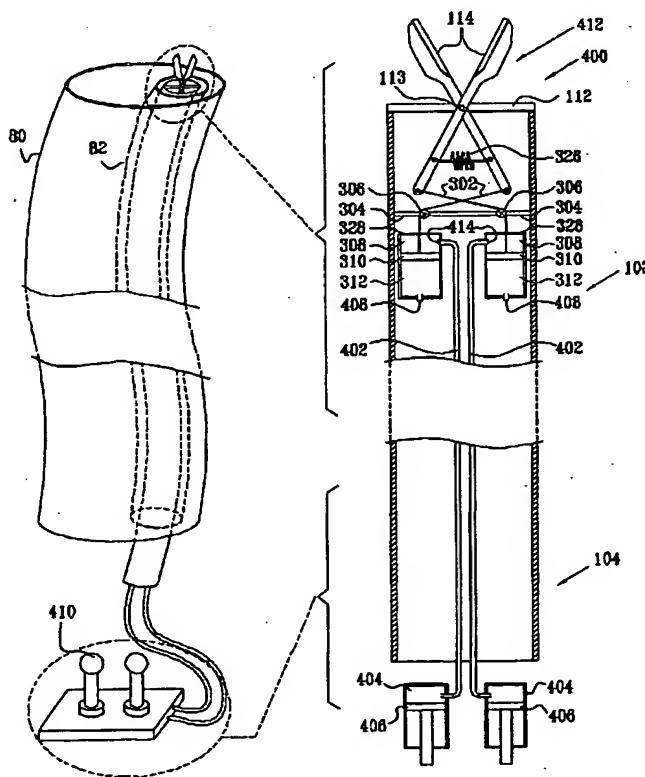
(75) Inventor/Applicant (for US only): OZ, Dan [IL/IL]; 18 Vatikim Street, 40500 Even Yehuda (IL).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: PISTON-ACTUATED ENDOSCOPIC TOOL



(57) Abstract: Endoscopic apparatus (400) is provided, having a distal end (102) for insertion into a body of a patient and a proximal end (104) that is held outside the body of the patient. The apparatus (400) includes a proximal cylinder (404), disposed in a vicinity of the proximal end (104) of the endoscopic apparatus (400). A proximal piston (406) is slidably contained within the proximal cylinder (404). A distal cylinder (328) is disposed in a vicinity of the distal end (102) of the endoscopic apparatus (400), and a distal piston (310) is slidably contained within the distal cylinder (328). A tube (402) for containing a liquid is coupled between the proximal (404) and distal (328) cylinders. A tool (e.g., biopsy tool 412) is coupled to be actuated by displacement of the distal piston (310), so as to perform a mechanical action on tissue of the body or contents of the body, responsive to displacement of the distal piston (310).

WO 2004/028585 A3



**Published:**

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**(88) Date of publication of the international search report:**

27 May 2004

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
8 April 2004 (08.04.2004)

PCT

(10) International Publication Number  
WO 2004/028585 A2

(51) International Patent Classification<sup>7</sup>:

A61M

(21) International Application Number:

PCT/IL2003/000751

(22) International Filing Date:

18 September 2003 (18.09.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/414,741 30 September 2002 (30.09.2002) US

(71) Applicant (for all designated States except US): SIGHT-LINE TECHNOLOGIES LTD. [IL/IL]; Advanced Technology Center (MATAM), 31905 Haifa (IL).

(72) Inventor; and

(75) Inventor/Applicant (for US only): OZ, Dan [IL/IL]; 18 Vatikim Street, 40500 Even Yehuda (IL).

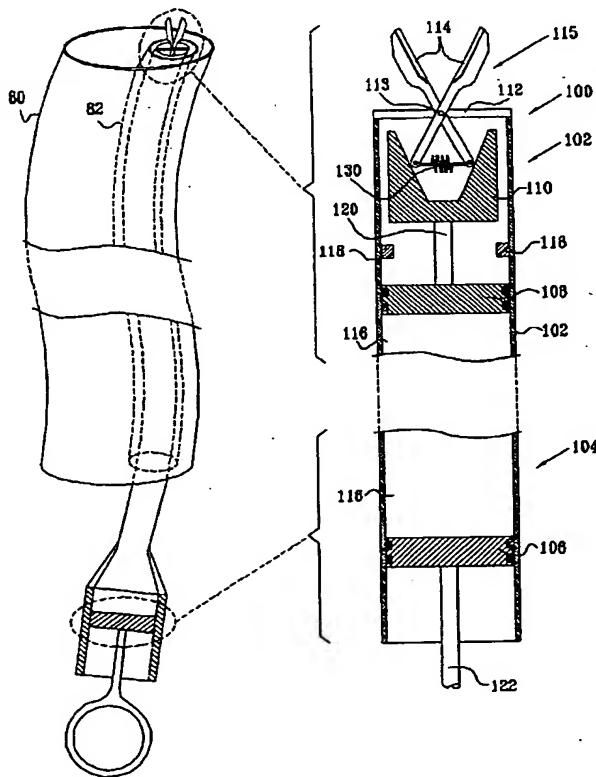
(74) Agents: SANFORD T. COLB & CO. et al.; P.O. Box 2273, 76122 Rehovot (IL).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

{Continued on next page}

(54) Title: PISTON-ACTUATED ENDOSCOPIC TOOL



(57) Abstract: Endoscopic apparatus is provided, having a distal end (102) for insertion into a body of a patient and a proximal end that is held outside the body of the patient. The apparatus includes a proximal cylinder (404), disposed in a vicinity of the proximal end of the endoscopic apparatus. A proximal piston (406) is slidably contained within the proximal cylinder. A distal cylinder (328) is disposed in a vicinity of the distal end of the endoscopic apparatus, and a distal piston (310) is slidably contained within the distal cylinder. A tube (402) for containing a liquid is coupled between the proximal and distal cylinders. A tool (e.g., biopsy tool 115) is coupled to be actuated by displacement of the distal piston, so as to perform a mechanical action on tissue of the body or contents of the body, responsive to displacement of the distal piston.

WO 2004/028585 A2



**Published:**

— *without international search report and to be republished upon receipt of that report*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*